GWP PALMER® SAFETY

•Fall Protection •Training •Netting •PPE

BEAMGUARD SAFETY POST
INSTRUCTION MANUAL

These Instructions Apply to the Following Model(s):
BGSAPOST, BGCONNECTORSTD, BGCONNECTORINT, BGCONNECTORLG

IMPORTANT:
Do not skip this instruction manual. Read the instruction manual carefully before using the equipment. Failure to do so may cause serious injury or death. These instructions serve as the Manufacturer's Instructions and are to be used as part of an employee training program, as required by OSHA.

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Overview

You have just purchased your very own Palmer Safety Fall Protection Beamguard Safety Post. This manual must be read and understood in its entirety, whereas any specified training course on fall protection can be utilized to provide the necessary knowledge.

All of these instructions need to be made available to the user of the equipment. The user needs to understand how the Beamguard Safety Post works and how to use it safely. They also need a basic understanding of fall safety equipment used in combination with the Beamguard Safety Post, such as harnesses and lanyards.

Safety Standards

All applicable OSHA 1926 Subpart M construction standard, OSHA 1910 general industrial standard, ANSI Z359.6-2016, and ANSI A10.32-2012 standards for fall protection are followed when this product is used as instructed. Standards are regulated depending on the type of work being done. You can review all regulations at regulatory agencies for more information on fall protection systems, including any of the state-specific regulations.

Worker Definitions

NOTE: It is important to know the definition of those who work near or who may be exposed to fall hazards.

Qualified Person: A person with accreditation for this position who has sufficient experience or standing in their industry. They are responsible for reviewing the effectiveness of fall prevention and rescue procedures.

Competent Person: A fall safety coordinator is a person who has been trained to manage all aspects of a company's fall safety program. This includes the actual regulation, the management thereof and its application. A person tasked with identifying existing or foreseeable hazards. They have the power to temporarily stop work to address any concerns they might have.

Authorized Person: An employee who's area of responsibility includes areas where potential or existing fall hazards exist. These employees need to be trained to understand what it takes to work safely around these hazards.

Qualified or Competent person on jobsite is responsible for training and inspection of the Beamguard Safety Post. Please contact your local Palmer Safety Specialist if you have questions or need training. We can provide training on the jobsite.

Applications

WARNING: Using the equipment in ways other than its intended purpose may result in severe injury or death. Maximum 1 attachment per connection point.

Fall Arrest: The Beamguard Safety Post can be used in Personal Fall Arrest (PFAS) applications. Personal fall protection equipment may be attached directly to a Beamguard. Maximum 1 attachment per Beamguard Safety Post when tied directly to the post. Do not climb above the base of the Beamguard when using the top of the Beamguard as an anchor point. When the Beamguard Safety Post is used as part of a HLL system, the system is for use by up to two workers per section, weighing less than 310 pounds (including tools and equipment) each, in each section. The maximum stanchion spacing is 60'. The Beamguard Safety Post must be used with the appropriate supporting structure. The supporting structure must also withstand loads applied in the advised directions of at least 5000 lbs. Maximum freefall height is 6 feet, or up to 12 feet when in combination with a harness that has been tested for such use. The D-ring needs to be in the dorsal position.

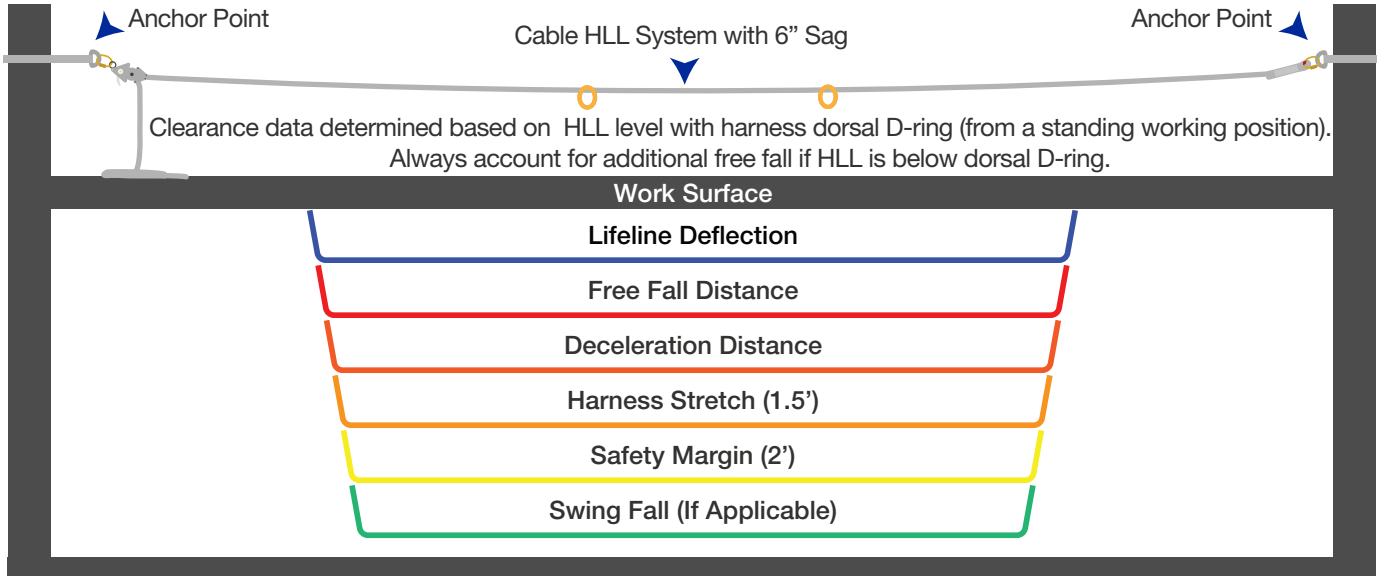
TOTAL per user weight capacity range (including person, clothing, tools, and equipment) is 130-310 lbs.

Limits

Fall Clearance: There should be enough clearance below the anchorage connector to arrest a fall before the person strikes the ground or an obstacle. When figuring out how far people might fall, there needs to be a safety buffer of 2 feet. People also need to consider the distance they are slowing down at, how tall they are, the length of their lanyard or SRL. They should also think about harness stretch and any other factors that apply.

Diagram shown below is a fall clearance calculation EXAMPLE ONLY.

TOTAL FALL CLEARANCE = DEFLECTION + FREE FALL + DECELERATION + STRETCH + SAFETY MARGIN + SWING FALL

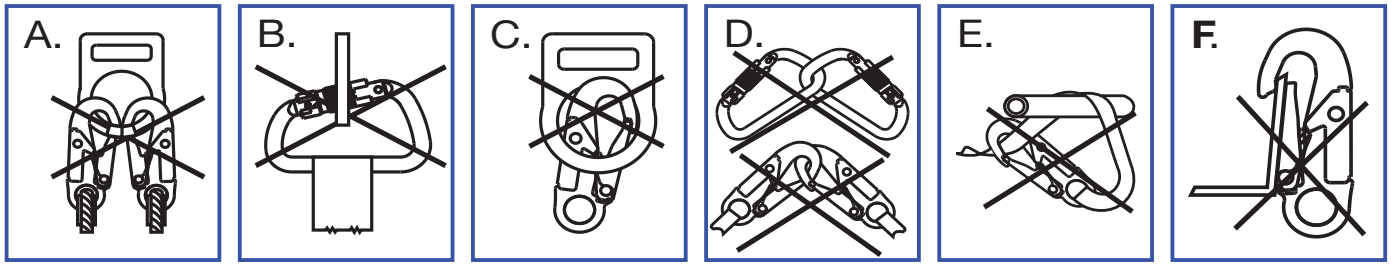


DEFLECTION

What's the length of your HLL span?

SPAN =	10'	20'	30'	40'	50'	60'	70'	80'	90'	100'
DEFLECTION =	39.05"	52.01"	62.18"	71.00"	79.14"	86.99"	94.83"	102.89"	111.35"	120.38"

Compatibility: To avoid interference when connecting Beamguard Safety Post, there must be enough space between the hook and its attachment point. This is known as "rolling out" and can cause the gate on the hook to inadvertently open and release. All cables must be compatible with Beamguard Safety Post and must be approved by a Competent Person. All connectors should be self-closing and self-locking, and should withstand a minimum load of 3,600 lbs.



A. Two or more connectors should never be attached to a single D-ring.

B. Never attach a connector that could result in a load on its gate.

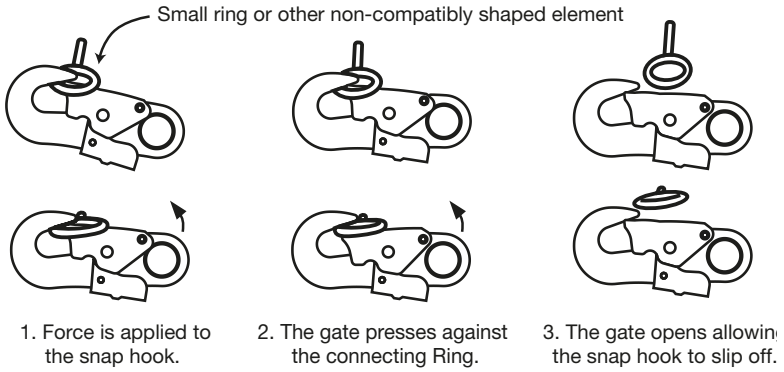
C. Connectors should not be connected in a false engagement. It should be visually confirmed that the connector is fully engaged to the anchor point. Avoid conditions that allow for features that protrude from the connectors to catch on the anchor, giving a false sense of being connected.

D. Connectors should not be connected to each other.

E. Connectors should not be connected directly to the webbing or to the rope lanyard or tie back, unless specifically allowed by the manufacturer.

F. Connectors should not be connected to any object which does not allow the connector gate to close or lock. Anchor shapes that allow roll out to occur should never be used for connection. If the anchor, to which the snap hook or carabiner is attached, is under sized or irregular in shape, then this may allow for the gate of the connector to come in contact with the anchor, thereby causing the connector to open up and possibly disengage from the anchor. This is known as roll out of the connector. See Diagram 2.

Diagram 2 - Unintentional Disengagement (roll-put)



G. Do not use connectors on an anchorage object as shown in figure A to F.

Correct Anchorage Positioning: This chart details allowable working zones required to reduce risk of swing falls and improper side loading. ALWAYS adhere to information specified by chart.

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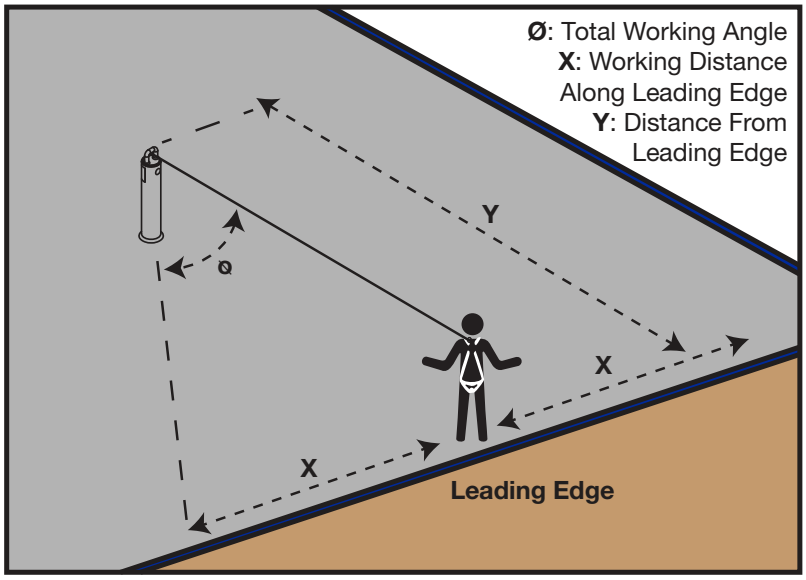


Anchor Distance From Leading Edge (Y)	Working Distance Along Roof Edge (Either Direction) (X)	Working Angle From Perpendicular (Ø)
6’	8’	53°
10’	9’ - 9”	45°
15’	11’ - 7”	38°
20’	13’ - 3”	33°
25’	14’ - 6”	30°
30’	16’	28°
35’	17’ - 2”	26°
40’	18’ - 3”	24°
45’	19’ - 4”	23°
50’	19’ - 10”	21°
55’	21’ - 4”	21°
60’	22’ - 3”	21°

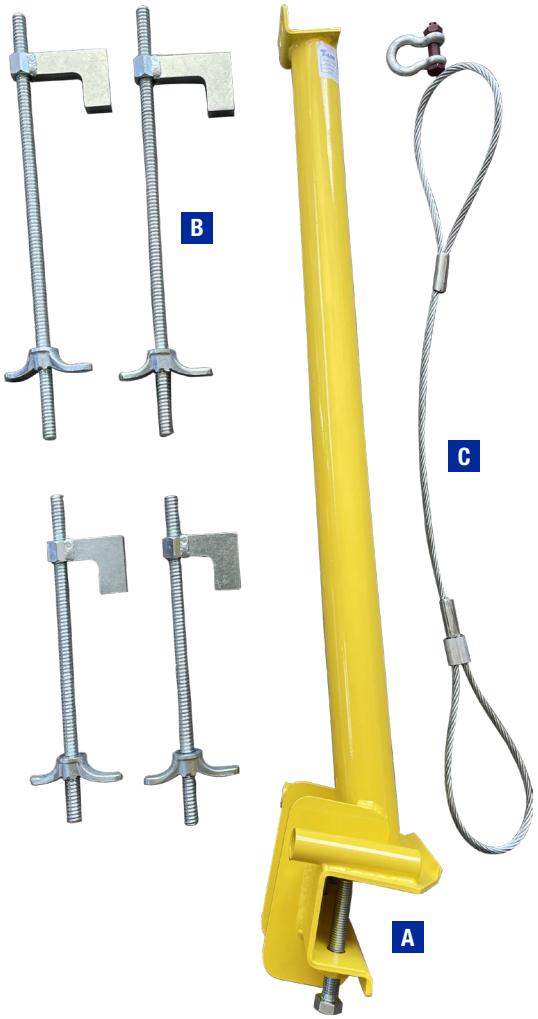
For example, if the anchorage connector is 6’ from the leading edge (Y), the working distance (X) is 8’ in each direction from the perpendicular, which translates to a 53° working angle.

Swing Falls: When using or installing any anchors, think about eliminating swing fall hazards. Swing falls happen when the anchor point is not directly over the object being secured. Always make your anchors as close to perpendicular to where you are securing something as possible. Swing falls can increase the chances of serious injury or death if there is a fall.

Product Components

A. Beamguard Standard Post
B. Beam Connector Set: Standard, Intermediate and Large
- Standard: The Standard Beam Connector fits flange thicknesses up to 1-1/4" and flange widths between 4" and 13-3/4"
- Intermediate: The Intermediate Beam Connector fits flange thicknesses to 2-1/8" and flange widths to 19-3/4"
- Large: The Large Beam Connector fits flange thicknesses to 3-3/8" and flange widths to 31-3/4"

C. Side Cable with Shackle



Product Specifications

- Maximum 1 connection per anchor when used as an anchor point
- Maximum 2 connections per section when used as part of an HLL system
- Worker Weight Range: 130-310 pounds including all tools and equipment
- Maximum Stanchion Spacing is 60'

Notes

1.) Make sure all workers have read and understand the warnings associated with this equipment.

2.) Make sure all workers are using other fall protection methods while installing the system.

3.) Installation and removal of this equipment must be done by trained personnel, failure to install the Beamguard system correctly may result in injury or death.

4.) Not for worker positioning or equipment handling or suspension

5.) Check to be sure the intended installation location is free from all damage and will support the loads applied by the Beamguard Safety Post as determined by a Competent Person. Some bending of the steel structure is possible when a fall occurs. It is the Competent Person's responsibility to ensure the beam and mounting location will support the loads applied in the event of a fall. The Beamguard system was tested on a rigidly supported 8.5" wide W16x58 and 10" wide W27x84 beams.

6.) Any components subjected to a fall or in any way subjected to a weight or impact must be removed from service right away and discarded or inspected by a Palmer Safety representative.

7.) The Beamguard Safety Post is designed to be used as part of a system. Do not use components or equipment that are not deemed compatible with the Beamguard Safety Post.

8.) Inspect the Beamguard Safety Post before installation. If any dents or bends in the post or any cracks or breaks in the welds on the base or steel plates are observed, remove from service immediately and discard or have the damaged piece inspected by a Palmer Safety Representative.

9.) Treat the Beamguard Safety Post like your life depends on it! Take care when storing, moving, and installing the Beamguard Safety Post. Do not drop, strike, or hammer on the Beamguard Safety Post!

10.) The side safety cable is to be used only in it's intended application. If the side safety cable is used for any other purpose it should not be used in service with the Beamguard system.

11.) This device does not guarantee the safety of the users of the system. Injury or death can occur in the event of a fall even when the device is used properly. The proper use of this device is only expected to reduce the possibility of injury or death.

12.) Workers using the system must wear a Palmer Safety full body harness (or equivalent) and a shock absorbing lanyard designed to reduce fall forces to 900 pounds or less.

13.) It is the employer's responsibility to have a plan to rescue and provide first aide to a fallen worker.

14.) Pay close attention to Fall Clearance. Use of a shorter lanyard/SRL or closer spacing of the posts, including intermediate posts, will greatly reduce the fall distance. Do not tighten the cable to reduce the fall distance!

15.) The Beamguard system works by way of the stretching of the cable, bending of the Beamguard Safety Posts and the shock absorbing action of the users shock absorbing lanyard. The stretching of the cable is an integral part of the operation of the Beamguard Safety Post. Do not overtighten the cable, the cable must have the correct amount of sag as shown in the following table. Do not adjust the tension in the cable by eye, measure the deflection of the sag in the cable at the midpoint with a ruler. Tightening the cable increases the forces in a fall.

16.) Use 3/8" wire rope for the cable. It is extremely important to install the wire rope clamps correctly to prevent slipping of the cable. Refer to the wire rope clamp manufacturer's instructions for proper installation of the wire rope clamps. IF THE WIRE ROPE SLIPS OUT OF THE WIRE ROPE CLAMPS THE SYSTEM WILL FAIL!

17.) If the distance between your posts is between the post spacing specified in the below chart, use the higher sag distance. For example, if your posts are spaced at 43 feet, use the minimum sag specified for 50 feet.

MINIMUM SAG REQUIRED AND ANTICIPATED TOTAL FALL DISTANCE BASED ON 2 WORKERS BETWEEN POSTS				
Beamguard Post Spacing	**Minimum Initial Sag**	**Maximum Total Additional Sag (below the top flange) of center point of cable at rest after fall**	**Shock Absorber Length**	**Top Flange Distance from Ground**
60'	12"	9.5'	<12"	21.5'
50'	11"	8.5'	<12"	20.5'
40'	10"	7.5'	<16"	19.9'
30'	8"	6.5'	<20"	19.3'
20'	6"	5.5'	<21"	18.4'
10'	6"	4.5'	<21"	17.4'

The above chart is estimating a 310 pound worker, a lighter worker will sag the cable less.

Installation and Use

1.) Determine the distance you want to have your Beamguard Safety Posts spaced to. There should be approximately 2 feet between the end of the beam and the Beamguard Safety Post. This provides for approximately 4 feet of spacing between the Beamguard Safety Post on the next or intersecting beam. This makes it easy for workers to transition between cable's using 2 lanyards ensuring uninterrupted fall protection.

2.) Adjust the length of the cable to within 6" of that distance (1' if using a turnbuckle).

3.) If a turnbuckle will be used, open it all the way leaving a minimum of 3 threads showing inside the barrel. Do not open the turnbuckle more than this, at least 3 threads must be showing inside the barrel. If not, the turnbuckle may come completely disconnected.

4.) Using a Safety Shackle, connect the cable to the eye on top of the Beamguard Safety Post. Tighten the shackle nut and secure using a cotter pin or other approve capture device.

5.) To mount the Beamguard Safety Post, slide the base plate over the top of the beam flange and push it all the way on making sure the back of the base plate touches the outer edge of the top flange. Tighten the bolts under the base plate by hand.

6.) Thread a flange hook matching the dimensions of the beam on to one end of the threaded rod. Make sure at least 3 threads of the threaded rod extend beyond the nut on the flange hook. Slide the other end of the threaded rod into the sleeve on top of the baseplate. Pull the threaded rod completely through the sleeve until the hook is completely engaged onto the flange on the opposite side of the beam. Thread the wing nut onto the threaded rod opposite of the flange hook and tighten. Strike the wing nut with a tool to fully tighten the wing nut. Both Beam Connectors should be installed in this way. It is very important to fully tighten the wing nuts on the Beamguard Connector. Make sure they are tight by striking the wing nuts with a tool. This is what holds the post onto the beam! Check before each shift by shaking the post to make sure it is tightly connected to the beam.

7.) Tighten the bolts on the underside of the Beamguard Safety Post baseplate with a wrench. Do not overtighten these bolts.

8.) Attached the side safety cable to the outside of the Beamguard Safety Post (the side opposite the side the cable will connect to). The safety cable has 2 eyes, 1 eye is fixed and 1 eye is adjustable with a sliding sleeve. The eye with the sliding sleeve is the bottom eye, place this eye around the wing nut and up underneath the sleeve on the bottom of the baseplate. Use the safety shackle to attach the top eye to the outside hole in the top plate of the Beamguard Safety Post. Move the sliding sleeve on the bottom eye about halfway, closing the eye.

9.) Now set the Beamguard Safety Post on the opposite side of the beam. Place the Beamguard Safety Post on the flange about 2' inside of the intended final position. Attach the other side of the cable to the inside hole at the top of the Beamguard Safety Post using a safety shackle, just like in line 4 above.

10.) Slide the Beamguard Safety Post along the top flange until the cable has the required sag, see the chart on page 7. Tighten the bolts under the baseplate by hand. If using a turnbuckle leave about 3" of extra sag.

11.) Thread a flange hook matching the dimensions of the beam on to one end of the threaded rod. Make sure at least 3 threads of the threaded rod extend beyond the nut on the flange hook. Slide the other end of the threaded rod into the sleeve on top of the baseplate. Pull the threaded rod completely through the sleeve until the hook is completely engaged onto the flange on the opposite side of the beam. Thread the wing nut onto the threaded rod opposite of the flange hook and tighten. Strike the wing nut with a tool to fully tighten the wing nut. Both Beam Connectors should be installed in this way. It is very important to fully tighten the wing nuts on the Beamguard Connector. Make sure they are tight by striking the wing nuts with a tool. This is what holds the post onto the beam! Check before each shift by shaking the post to make sure it is tightly connected to the beam.

12.) Tighten the bolts on the underside of the Beamguard Safety Post baseplate with a wrench. Do not overtighten these bolts.

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14.) Measure the cable sag in the mid-point between the 2 Beamguard Safety Posts with a ruler. Make sure the sag is at least as much as specified in the chart on page 7. If using a turnbuckle, one worker must measure the sag with a ruler as the other worker tightens the turnbuckle until the sag is the amount specified in the chart on page 7. Do not overtighten the turnbuckle!

15.) Do not overtighten the cable! The sag must be as specified in the chart. Overtightening the cable will increase the forces of a fall.

16.) The Beamguard safety system is now ready for use. Workers must wear approved safety harness and safety lanyard not more than 6' long and able to reduces inline forces to less than 900 pounds.

17.) MAKE SURE THE BEAM IS PROPERLY SECURED AND ABLE TO WITHSTAND THE FORCES OF A FALL!

18.) It is very important to fully tighten the wing nuts on the Beamguard Connector. Make sure they are tight by striking the wing nuts with a tool. This is what holds the post onto the beam! Check before each shift by shaking the post to make sure it is tightly connected to the beam.

19.) When using an intermediate post it is not necessary to use side safety cables on the intermediate post. You must use a side safety cable on the outside of each end post, as described in number 8 and 13 above.

Maintenance, Cleaning, and Storage

If Beamguard Safety Post System fails inspection in any way, immediately remove it from service, and contact Palmer Safety to inquire about its return or repair.

Cleaning after use is important for maintaining the safety and longevity of Beamguard Safety Post. Remove all dirt, corrosives, and contaminants from Beamguard Safety Post before and after each use. If Beamguard Safety Post cannot be cleaned with plain water, use mild soap and water, then rinse and wipe dry. NEVER clean Beamguard Safety Post with corrosive substances.

When not in use, store equipment where it will not be affected by heat, light, excessive moisture, chemicals, or other degrading elements.

Inspection

1.) All components of the Beamguard should be inspected before each use.
If any damage is found or system is involved in a fall remove from jobsite immediately.
2.) System should be inspected by a Competent Person at a minimum of every 6 months.
3.) All inspections should be documented.

Palmer Safety would be glad to help with any inspections.

Inspection Log

SERIAL NUMBER:			
MODEL NUMBER:			
DATE PURCHASED:		**DATE OF FIRST USE:**	

	J	F	M	A	M	J	J	A	S	O	N	D
YR												
YR												
YR												
YR												
YR												

Product lifetime is indefinite as long as it passes pre-use and Competent Person inspections. User must inspect prior to EACH use. Competent Person other than user must complete formal at least every 6 months. Competent Person to inspect and initial.

This inspection log must be specific to one Beamguard Safety Post. All inspection records must be made visible and available to all users at all times.

If equipment fails inspection or is involved in a fall **REMOVE FROM SERVICE IMMEDIATELY**.

INSPECTION DATE	INSPECTION ITEMS NOTED	CORRECTIVE ACTION	MAINTENANCE PERFORMED
Approved by:			
Approved by:			
Approved by:			
Approved by:			
Approved by:			

Safety Information

WARNING: Failure to understand and comply with safety regulations may result in serious injury or death. Regulations included herein are not all-inclusive, are for reference only, and are not intended to replace a Competent Person's judgment or knowledge of federal or state standards.

Notes: